

## VII. ABSTRACT

A process system that uses a reduced amount of lime or other base to clarify or purify juice or other process liquid (1) obtained from plant material (2) such as sugar cane, sugar beets, or sweet sorghum. Specifically, apparatus and methods to reduce  
5 volatile materials in juice or other process liquid (1) to increase pH requiring the use of less lime or other base to achieve the desired pH values for clarification or purification in subsequent steps, such as preliming (33).